



## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration L.L.C.**

133 North Glendale  
Wichita, Kansas 67208

ATTN: Adam Kennedy

### **Morgenstern #1-2**

### **2-17s-13w Barton**

Start Date: 2011.12.08 @ 10:30:00

End Date: 2011.12.08 @ 00:00:00

Job Ticket #: 18665                      DST #: 3

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2011.12.08 @ 17:15:14



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**DST#: 3**

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Test Start: 2011.12.08 @ 10:30:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:00:00

Time Test Ended: 00:00:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 3335-42

**Interval: 3326.00 ft (KB) To 3332.00 ft (KB) (TVD)**

Reference Elevations: 1867.00 ft (KB)

Total Depth: 3332.00 ft (KB) (TVD)

1859.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8524 Outside**

Press @ RunDepth: 998.62 psia @ 3329.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2011.12.08

End Date: 2011.12.08

Last Calib.: 2011.12.08

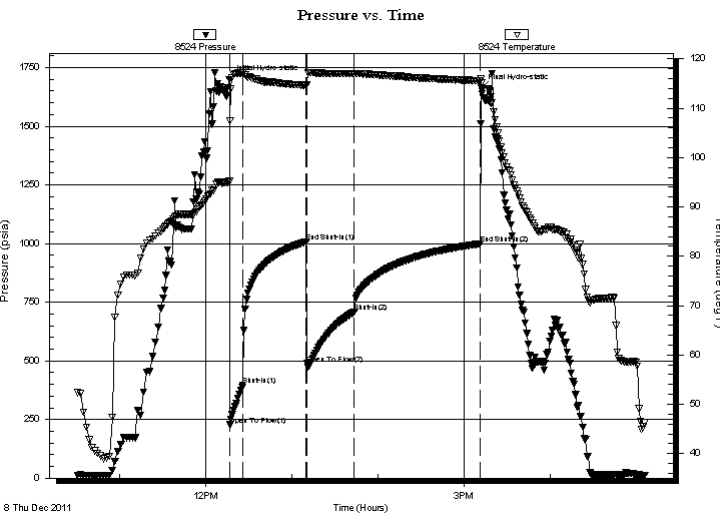
Start Time: 10:30:00

End Time: 17:06:00

Time On Btm: 2011.12.08 @ 12:16:30

Time Off Btm: 2011.12.08 @ 15:12:00

**TEST COMMENT:** 1st Opening 10 Minutes-Good blow built to the bottom of a 5 gallon bucket in 1 minute  
 1st Shut-In 45 Minutes-No blow back  
 2nd Opening 30 Minutes-good blow built to the bottom of a 5 gallon bucket in 1 minute  
 2nd Shut-In 90 Minutes- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1698.57	95.17	Initial Hydro-static
1	227.56	107.49	Open To Flow (1)
10	395.98	117.11	Shut-In(1)
54	1007.93	114.59	End Shut-In(1)
54	488.13	114.80	Open To Flow (2)
88	709.39	116.97	Shut-In(2)
175	998.62	115.60	End Shut-In(2)
176	1662.37	115.11	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
150.00	Clean Oil 5%Gas 95%Oil Gravity 39	0.74
60.00	Oil cut muddy w ater	0.30
0.00	5%Gas30%Oil 20%Mud 45%w ater	0.00
60.00	Oil cut muddy w ater	0.30
0.00	5%Gas 10%Oil 20%Mud 65%w ater	0.00
180.00	Slightly oil and mud cut w ater	2.16

## Gas Rates

Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



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**Morgenstern #1-2**

Job Ticket: 18665

**DST#: 3**

ATTN: Adam Kennedy

Test Start: 2011.12.08 @ 10:30:00

## GENERAL INFORMATION:

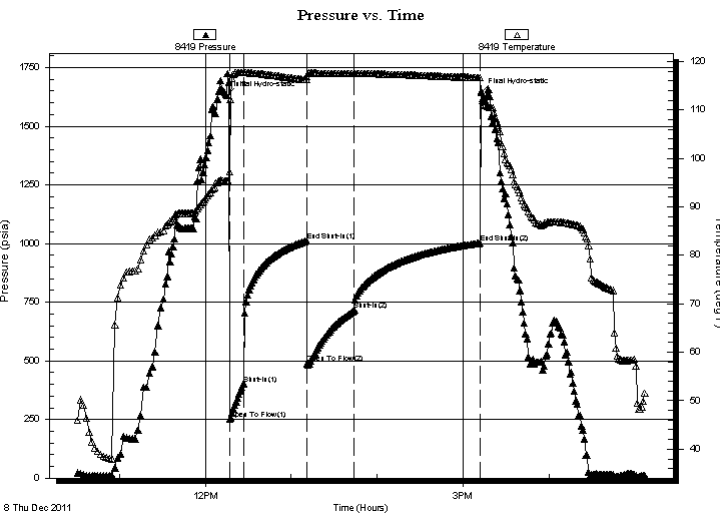
Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 00:00:00  
 Time Test Ended: 00:00:00  
 Interval: **3326.00 ft (KB) To 3332.00 ft (KB) (TVD)**  
 Total Depth: 3332.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Gene Budig  
 Unit No: 3335-42  
 Reference Elevations: 1867.00 ft (KB)  
 1859.00 ft (CF)  
 KB to GR/CF: 8.00 ft

## Serial #: 8419

**Inside**

Press @ Run Depth: 1001.50 psia @ 3328.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2011.12.08 End Date: 2011.12.08 Last Calib.: 2011.12.08  
 Start Time: 10:30:00 End Time: 17:07:00 Time On Btm: 2011.12.08 @ 12:15:00  
 Time Off Btm: 2011.12.08 @ 15:12:30

**TEST COMMENT:** 1st Opening 10 Minutes-Good blow built to the bottom of a 5 gallon bucket in 1 minute  
 1st Shut-In 45 Minutes-No blow back  
 2nd Opening 30 Minutes-good blow built to the bottom of a 5 gallon bucket in 1 minute  
 2nd Shut-In 90 Minutes- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1629.35	95.35	Initial Hydro-static
2	250.51	97.23	Open To Flow (1)
12	402.54	117.67	Shut-In(1)
56	1010.59	116.22	End Shut-In(1)
56	488.67	116.86	Open To Flow (2)
89	715.95	117.44	Shut-In(2)
177	1001.50	116.66	End Shut-In(2)
178	1644.89	113.86	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
150.00	Clean Oil 5%Gas 95%Oil Gravity 39	0.74
60.00	Oil cut muddy w ater	0.30
0.00	5%Gas30%Oil 20%Mud 45%w ater	0.00
60.00	Oil cut muddy w ater	0.30
0.00	5%Gas 10%Oil 20%Mud 65%w ater	0.00
180.00	Slightly oil and mud cut w ater	2.16

## Gas Rates

Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



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**TOOL DIAGRAM**

Valhalla Exploration L.L.C.

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**Morgenstern #1-2**

Job Ticket: 18665

**DST#: 3**

ATTN: Adam Kennedy

Test Start: 2011.12.08 @ 10:30:00

## Tool Information

Drill Pipe:	Length: 3008.00 ft	Diameter: 3.80 inches	Volume: 42.19 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.86 inches	Volume: - bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 310.00 ft	Diameter: 2.25 inches	Volume: 1.52 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	3326.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	6.00 ft			
Tool Length:	29.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
SHut-InTool	5.00		Inside	3308.00	
Hydraulic Tool	5.00			3313.00	
Jars	6.00			3319.00	
Safety Joint	2.00			3321.00	
Packer	5.00			3326.00	23.00 Bottom Of Top Packer
Anchor	1.00			3327.00	
Recorder	1.00	8419	Inside	3328.00	
Recorder	1.00	8524	Outside	3329.00	
Bullnose	3.00			3332.00	6.00 Anchor Tool
<b>Total Tool Length:</b>	<b>29.00</b>				



# DRILL STEM TEST REPORT

## FLUID SUMMARY

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ATTN: Adam Kennedy

Test Start: 2011.12.08 @ 10:30:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 59.00 sec/qt  
Water Loss: 7.60 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6300.00 ppm  
Filter Cake: 1.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psia

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	Clean Oil 5%Gas 95%Oil Gravity 39	0.738
60.00	Oil cut muddy w ater	0.295
0.00	5%Gas30%Oil 20%Mud 45%w ater	0.000
60.00	Oil cut muddy w ater	0.295
0.00	5%Gas 10%Oil 20%Mud 65%w ater	0.000
180.00	Slightly oil and mud cut w ater	2.161
0.00	8%Oil 10%Mud 82%Water	0.000
240.00	Slightly oil cut w ater	3.367
0.00	3%Oil 2%Mud 95%w ater	0.000
1050.00	Water chlorides 18000	14.729
0.00	Resistivity 3.75 @58 Degrees	0.000

Total Length: 1740.00 ft      Total Volume: 21.585 bbl

Num Fluid Samples: 0

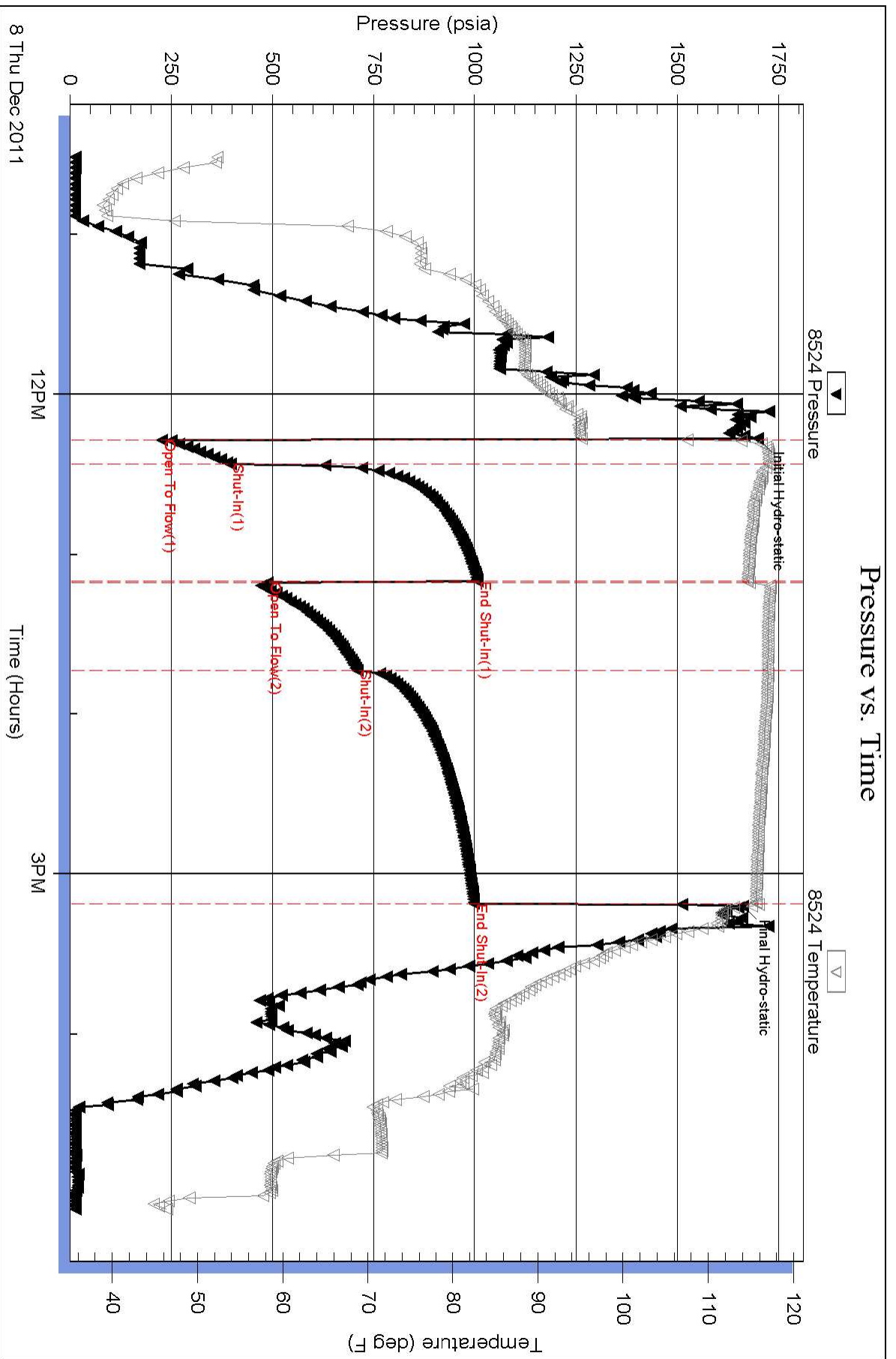
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



### Pressure vs. Time

